

FUJITA

Application No. 10/693,954

April 12, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A line drawing image generating device for generating line drawing data based on original image data, comprising:

ink line area detecting ~~means~~mechanism for detecting an area whose brightness is smaller than a predetermined value in an original image, as an ink line area;

neighboring area detecting ~~means~~mechanism for detecting a neighboring area of the ink line area, which surrounds the ink line area;

outline area detecting ~~means~~mechanism for detecting an outline portion of an image as an outline area, with respect to an area other than the ink line area and the neighboring area in the original image;

line drawing data storing ~~means~~mechanism for storing the line drawing data; and

color data writing ~~means~~mechanism for writing color data to a storage area of the line drawing data storing ~~means~~mechanism, which corresponds to the ink line area and the outline area, and writing different color data to a another storage area of the line drawing data storing ~~means~~mechanism, which corresponds to an area other than the ink line area and the outline area.

2. (currently amended) The line drawing image generating

device according to claim 1, wherein

the original image contains a plurality of pixels, and

when the ink line area is included in a predetermined area surrounding a pixel to be processed in the original image, and the pixel to be processed is not included in the ink line area, the neighboring area detecting ~~means~~mechanism detects the pixel to be processed as the neighboring area.

3. (currently amended) The line drawing image generating device according to claim 1, wherein the ink line area detecting ~~means~~mechanism detects, as the ink line area, a portion of an area where brightness is smaller than a predetermined value, such that the portion lies near the outline of the area.

4. (currently amended) The line drawing image generating device according to claim 3, wherein
the original image contains a plurality of pixels, and
when an area other than the ink line area is included in a predetermined area surrounding a pixel to be processed included in an area whose brightness is smaller than a predetermined value, the ink line area detecting ~~means~~mechanism detects the pixel to be processed as the ink line area.

5. (currently amended) The line drawing image generating device according to claim 1, further comprising still image data extracting ~~means~~

FUJITA

Application No. 10/693,954

April 12, 2005

mechanism for extracting arbitrary still image data from moving image data,
wherein

the line drawing data is generated using the still image data, which is
extracted by the still image data extracting ~~means~~mechanism, as the original image
data.

6. (currently amended) A computer readable storage medium
storing a line drawing image generating program for generating line drawing data
based on original image data, wherein the line drawing image generating program
causes a computer to execute steps of:

~~an ink line area detecting step of~~ detecting an area whose brightness is
smaller than a predetermined value in an original image as an ink line area;

~~a neighboring area detecting step of~~ detecting a neighboring area of the ink
line area, which surrounds the ink line area;

~~an outline area detecting step of~~ detecting an outline portion of an image as
an outline area with respect to an area other than the ink line area and the
neighboring area in the original image; and

~~a color data writing step of~~ writing color data to a storage area of a line
drawing data storing ~~means~~memory for storing the line drawing data, which
corresponds to the ink line area and the outline area, and writing different color
data to ~~a~~another storage area of the line drawing data storing ~~means~~memory,
which corresponds to an area other than the ink line area and the outline area.

FUJITA

Application No. 10/693,954

April 12, 2005

7. (currently amended) The storage medium according to claim 6, wherein the original image contains a plurality of pixels, and when the ink line area is included in a predetermined area surrounding a pixel to be processed in the original image and the pixel to be processed is not included in the ink line area, the line drawing image generating program causes the computer to detect the pixel to be processed as the neighboring area ~~at the neighboring area detecting step~~ in the step of detecting the neighboring area.

8. (currently amended) The storage medium according to claim 6, wherein the ~~ink line area detecting step~~ of detecting the ink line area, detects, as the ink line area, a portion of an area where brightness is smaller than a predetermined value, such that the portion lies near the outline of the area.

9. (currently amended) The storage medium according to claim 8, wherein the original image contains a plurality of pixels, and when an area other than the ink line area is included in a predetermined area surrounding a pixel to be processed included in an area whose brightness is smaller than a predetermined value, the line drawing image generating program causes the computer to detect the pixel to be processed as the ink line area ~~at in the ink line area detecting step~~ of detecting the ink line area.

10. (currently amended) ~~The line drawing image generating~~

FUJITA

Application No. 10/693,954

April 12, 2005

~~program storage medium according to claim 6 wherein the line drawing image~~
~~generating program further causing causes~~ the computer to execute a still image
data extracting step of extracting arbitrary still image data from moving image
data, ~~wherein and~~

the line drawing image generating program causes the computer to generate
the line drawing data using the still image data, which is extracted by the still
image data extracting step, as the original image data.

11. (currently amended) A line drawing image generating method
for generating line drawing data based on original image data, the method
comprising:

~~an ink line area detecting step of detecting an area whose brightness is~~
smaller than a predetermined value in an original image, as an ink line area;

~~a neighboring area detecting step of detecting a neighboring area of the ink~~
line area, which surrounds the ink line area;

~~an outline area detecting step of detecting an outline portion of an image as~~
an outline area with respect to an area other than the ink line area and the
neighboring area in the original image; and

~~a color data writing step of writing color data to a storage area of a line~~
drawing data storing ~~means~~ memory for storing the line drawing data, which
corresponds to the ink line area and the outline area, and writing different color
data to ~~a~~ another storage area of the line drawing data storing ~~means~~ memory,

which corresponds to an area other than the ink line area and the outline area.

12. (new) A computer readable storage medium storing a line drawing image generating program for generating line drawing data based on an original image, wherein the line drawing image generating program causes a computer to execute:

detecting an ink line area of the original image, the ink line area having a brightness which is smaller than a predetermined value;

detecting a neighboring area of the original image, the neighboring area neighboring the ink line area;

detecting an outline area of the original image, the outline area being outside of the ink line area and the neighboring area and having a brightness which differs from an area adjacent to the outline area;

assigning data corresponding to a first color to both the ink line area and the outline area; and

assigning data corresponding to a second color, different than the first color, to at least the neighboring area.

13. (new) The storage medium of claim 12, wherein the program further causes the computer to re-assign data of an interior portion of the ink line area so that the data of the interior portion of the ink line area corresponds to the second color rather than the first color.

14. (new) The storage medium of claim 12, wherein the program further causes the computer to obtain the original image by extracting a still image from a moving image.

15. (new) The storage medium of claim 12, wherein in addition to the neighboring area, all other areas of the original image outside of the ink line area and the outline area are assigned data corresponding to the second color.

16. (new) A method of generating line drawing data based on original image data, the method comprising:

detecting pixels of an ink line area of the original image data, the ink line area pixels having respective brightnesses which are smaller than a predetermined value;

detecting pixels of a neighboring area of the original image data, the neighboring area pixels neighboring the ink line area pixels;

detecting pixels of an outline area of the original image data, the outline area being outside of the ink line area and the neighboring area, and the outline area pixels having respective brightnesses which differ from pixels adjacent to the outline area pixels;

assigning data corresponding to a first color to both the ink line area pixels and the outline area pixels; and

assigning data corresponding to a second color, different than the first color, to at least the neighboring area pixels.

17. (new) The method of claim 16, wherein the method further comprising re-assigning data of an interior portion of the ink line area so that the data assigned to the pixels of the interior portion of the ink line area corresponds to the second color rather than the first color.

18. (new) The method of claim 16, wherein the method further comprises obtaining the original image data by extracting still image data from moving image data.

19. (new) The method claim 16, wherein in addition to the neighboring area pixels, all other pixels of the original image data outside of the ink area and the outline area are assigned data corresponding to the second color.